## REMARKS

The Examiner is thanked for the consideration given the application.

Claims 1-5, 7 and 9-23 are pending in the application. Claims 22 and 23 are newly presented. New claim 22 generally sets forth part of the subject matter of claim 1. New claim 23 generally sets forth part of the subject matter of claim 1, and finds further support at page 9, lines 26-30 of the specification.

No new matter is believed to be added to the application by this amendment.

## Rejections Based on DADD

Claims 1, 3-5, 7 and 9-19 have been rejected under 35 USC 103(a) as being unpatentable over DADD (U.S. Patent 4,230,571) in view of TRIBELSKY (U.S. Patent 6,555,011). Claims 20 and 21 have been rejected under 35 USC 103(a) as being unpatentable over DADD in view of TRIBELSKY, and further in view of MANCIL (U.S. Patent 5,843,309). These rejections are respectfully traversed.

The present invention pertains to a method for treating liquids that can use, by way of example, the apparatus illustrated in Figure 3 of the application, which is reproduced below.

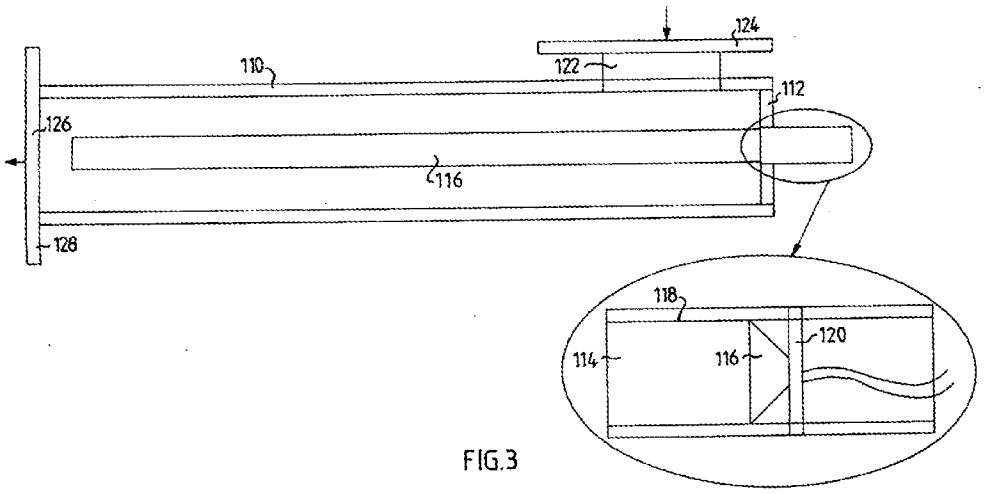


FIG.3

Figure 3 shows a UV light source 116 that directly irradiates a catalyst, which can be a titanium oxide film coating the inside of a pipe 110. Claim 1 of the present invention recites "irradiating the flow of liquid containing the in-mixed ozone in order to break down the ozone in the liquid for producing free radicals," and "exposing the fluid to at least one catalyst at the same time as the ozone is broken down for increasing the amount of free radicals."

DADD pertains to ozone/ultraviolet water purification. The Official Action refers to Figure 2 of DADD, which is reproduced below.

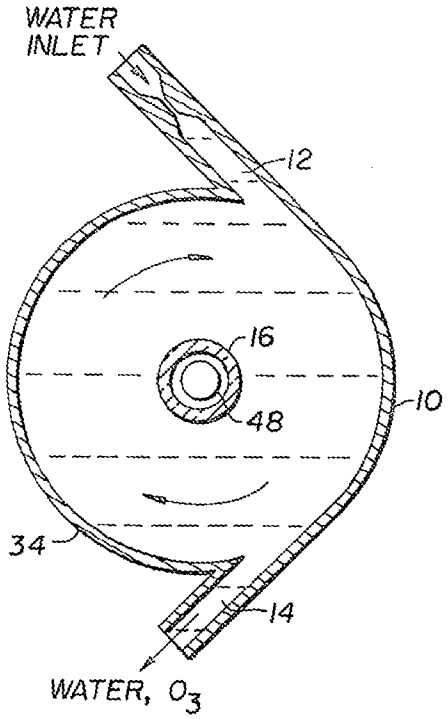


Fig. 2.

Figure 2 of DADD shows a water inlet 12, a water outlet 14 and a conduit 16. In the conduit 16 is the glass tube 48 of an ultraviolet light.

DADD thus pertains to a method of purifying water wherein air is radiated by a UV radiating means for creating ozone in the air. This air is then mixed with water to be treated. The water mixed with ozone is then irradiated by the UV radiating means.

That is, as has been made of record in the application, DADD discloses a method of purifying water wherein air is radiated by a UV radiating means for creating ozone in the air.

This air is then mixed with water to be treated. The water mixed with ozone is then irradiated by the UV radiating means.

In this way a double action is obtained in that ozone acts directly to kill bacteria and viruses in the water and whereby the UV radiation acts as a catalytic effect on the reaction of the ozone.

However, when reading DADD closely, there is no production of radicals, in contrast to the remarks in the Official Action, citing the passage at column 2, lines 33-35. That passage only explains that the mix of water and ozone, which ozone has been produced previously by a UV radiation source is subjected to the radiation of the same UV radiation source. There is no mention, neither in the passage nor in the rest of the document, that any radicals are produced by breaking down the produced ozone. On the contrary there are several passages stating that the ozone is the major and really, the only, treatment component.

DADD thus teaches away from the present invention.

DADD thus lacks at least the feature of the creation of radicals by breaking down ozone. In contrast to DADD, the present invention utilizes the free radicals as the main treatment component, and not the ozone. The ozone is merely an intermediate step in creating the radicals.

Secondly, DADD does not mention at all the use of catalysts for increasing the amount of radicals.

The Official Action acknowledges that DADD does not disclose exposing the liquid to at least one catalyst at the same time as the ozone is broken down for increasing an amount of free radicals and at least one catalyst arranged in the container and positioned to be irradiated by the UV generating light source, which catalyst is capable of breaking down the ozone for increasing the amount of free radicals, and where substantially a whole of in inner surface is arranged with the catalyst. The Official Action refers to TRIBELSKY to address these deficiencies of DADD.

TRIBELSKY discloses a method for purifying liquids and gasses. The method comprises utilizing a number of reactors having a specific shape and function, so called Truncated (THDCPC) reactors. The inner surface of the THDCPC-reactors are preferably covered by catalytic materials such as for example $TiO_2$, providing an optical catalyst. The method uses a compounded number of elements together such as laser light and ultrasound transient cavitation in order to trigger the optical catalyst, but also microwaves, air bubbles, sonoluminescence, ozone, polychromatic continuous wave, enriched air bubbles.

That is, TRIBELSKY tries to include many elements in one treatment method. However, and this is one of the key differences, each element is intended to work independently even if several, elements are used at the same time in the method and even in one CPC-reactor. There is no mention whatsoever of a

combined effect or utilizing components (ozone) created by one element (UV with one wavelength) to be used with another element (UV with another wavelength) in order to create the final treatment component (radicals).

Thus, TRIBELSKY mentions radicals, but they are created directly in a photocatalytic process using UV light and catalysts, and not via ozone as an intermediate. TRIBELSKY also mentions creation and use of ozone, but this is only created *in situ*, and is only used for mild residual neutralization.

Conclusion: ozone is produced for its own separate treatment purpose and radicals are produced for their own separate treatment purpose. There is thus no link in TRIBELSKY between the creation of ozone and the production of free radicals.

Since DADD does not mention creation or use of free radicals at all, the skilled person is not provided with any teaching from TRIBELSKY to arrive at the claimed invention.

MANCIL fails to address the deficiencies of DADD and TRIBGELSKY discussed above.

One of ordinary skill and creativity would thus fail to produce a claimed embodiment of the present invention from a knowledge of the applied art references. A prima facie case of unpatentabiilty has thus not been made.

These rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

**Conclusion**

No issues remain and the issuance of a Notice of Allowability is respectfully solicited.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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